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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:  
Ulrichsen et al.

Serial No. 09/541,718 Group Art Unit: 3653

Filing Date: April 30, 2000 Examiner: T. Nguyen

For: DETERMINATION OF CHARACTERISTICS OF MATERIAL

CERTIFICATE OF MAILING

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Suzanne J. Wills  
Suzanne J. Wills

**BRIEF IN SUPPORT OF APPEAL**

The Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

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In response to the Final Rejection dated 11 June 2002 and the Notice of Appeal filed on 4 November 2002, Appellant submits the following brief in support of the patentability of the claimed invention.

I. REAL PARTY IN INTEREST

The captioned party.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences in connection with this case.

III. STATUS OF CLAIMS

Claims 144, 145, 148-154, 156-166, and 168-175 are pending in the application.

Claims 148-154, 156-166, 172, 173, and 175 have been allowed.

Claims 144, 145, 168-171, 174, and 176 were finally rejected under 35 USC §102(b) as being anticipated by EPO '221.

The Appellant has cancelled claim 176.

#### IV. STATUS OF AMENDMENTS

Following the final rejection the Appellant requested and the Examiner entered amendments to three claims including the following amendment to finally-rejected claim 174:

Claim 174 (twice amended). A method of automatically inspecting a stream of matter for varying composition, comprising [A method of automatically inspecting matter for varying composition, comprising] a detection station through which said stream passes, emitting means serving to emit a detection medium to be active at a transverse section of said stream at said station, receiving means at said station arranged to extend physically across substantially the width of said stream serving to receive detection medium varied by variations in the composition of said matter at said section, detecting means arranged to be in communication with said receiving means and serving to generate detection data independent upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, wherein said station is a metal-detection station, said emitting means serves to emit electromagnetic field, and said receiving means comprises a multiplicity of electromagnetic field sensing devices arranged to be distributed across said stream.

In a Supplemental Amendment mailed 14 November 2002, the Appellant requested that the Examiner enter amendments to the following additional amendments to

claim 174 to correct typographical and transcription errors:

Claim 174 (thrice amended). [A method of] Apparatus for automatically inspecting a stream of matter for varying composition, comprising a detection station through which said stream passes, emitting means serving to emit a detection medium to be active at a transverse section of said stream at said station, receiving means at said station arranged to extend physically across substantially the width of said stream serving to receive detection medium varied by variations in the composition of said matter at said section, detecting means arranged to be in communication with said receiving means and serving to generate detection data [independent] in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, wherein said station is a metal-detection station, said emitting means serves to emit electromagnetic field, and said receiving means comprises a multiplicity of electromagnetic field sensing devices arranged to be distributed across said stream.

In a second Supplemental Amendment mailed 19 December 2002, the Appellant requested that the Examiner enter the following amendments to finally-rejected claims 168 and 169 to, in claim 168, replace the term "advancing means" with a term ("stream") having proper antecedent basis, and, in claim 169, to provide proper antecedent basis for the term "advancing means" and to remove a multiple dependency:

168 (twice amended). Apparatus according to claim 174, wherein said emitting means which serves to generate an electromagnetic field comprises an antenna extending across said [advancing means] stream at said metal-detection station.

169 (twice amended). Apparatus according to claim 174 [or 168 wherein], and further comprising advancing means for advancing said stream through said station,

said advancing means [is] being situated between said emitting means and said receiving means for the field.

The Appellant has subsequently discovered that claim 144 is in need of further amendment. Because of a transcription error, the claim includes the redundant phrase "comprising electromagnetic radiation". This phrase should be deleted as shown.

144. A method of automatically inspecting matter for varying composition, comprising advancing a stream of said matter through a detection station, irradiating with electromagnetic radiation [comprising electromagnetic radiation] a section of said stream at said station, scanning said section and determining the intensity of electromagnetic radiation of selected wavelength(s) received from portions of said stream, and obtaining detection data from said detection station, wherein said scanning is performed in respect of a plurality of discrete detection zones distributed across said stream and said determining is performed for each detection zone in respect of a plurality of said wavelengths simultaneously.

#### V. SUMMARY OF INVENTION

As recited in base claim 144, the invention is a method of automatically inspecting matter for varying composition. The method includes advancing a stream 1 of matter through a detection station 131, irradiating a section of the stream 1 with electromagnetic radiation at the station 131, scanning the section and determining the intensity of electromagnetic radiation of selected wavelength(s) received from portions of the stream 1, and obtaining detection data from the detection station 131. The scanning is performed in respect of a plurality of discrete detection zones [for example, as represented by the lenses 6 in Figure 1, or imaginarily by the reference numeral 187 in Figure 11] distributed across the stream 1. The determining is performed for each detection zone in respect of a plurality of the wavelengths simultaneously.

According to another aspect of the invention, and as recited in claim 145, portions of the stream 1 comprise polymer and the plurality of wavelengths comprise a plurality of wavelength bands in the region 1.5 microns to 1.85 microns.

As recited in base claim 174, the invention is an apparatus for automatically inspecting a stream 1 of matter for varying composition. One embodiment of this invention is shown in Figure 2 and described in the specification from line 37 of page 19 through line 11 of page 20. The apparatus comprises a detection station 131, emitting means 138, receiving means 139, detecting means 140, and data-obtaining means 135. The stream 1 passes through the detection station 131. The emitting means 138 emits a detection medium to be active at a transverse section of the stream 1 at the station 131. The receiving means 139 is arranged at the station 131 to extend physically across substantially the width of the stream 1 serving to receive detection medium varied by variations in the composition of the matter at the section. The detecting means 140 is arranged to be in communication with the receiving means 139 and generates detection data in dependence upon the variations in the medium. The data-obtaining means 135 is connected to the detecting means 140 and obtains the detection data therefrom. The station 131 is a metal-detection station, the emitting means 138 serves to emit an electromagnetic field, and the receiving means comprises a multiplicity of electromagnetic field sensing devices 139 arranged to be distributed across the stream 1.

According to another aspect of the invention, and as recited in claim 168 and shown in the embodiment of Figure 2, the emitting means 138, which serves to generate an electromagnetic field, comprises an antenna 138 extending across the stream 1 at the metal-detection station 131.

According to another aspect of the invention, and as recited in claim 169 and shown in the embodiment of Figure 2, the apparatus further comprises advancing means

104 for advancing the stream 1 through the station, the advancing means 104 being situated between the emitting means 138 and the receiving means 139 for the field. In the embodiment shown in Figure 2, the advancing means is a conveyor belt 104.

According to another aspect of the invention, and as recited in claim 170 and shown in the embodiment of Figure 2, the emitting means 138 is connected to an oscillator 137, whereby the electromagnetic field oscillates, and wherein the sensing devices are electromagnetic field frequency sensing devices 139.

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According to another aspect of the invention, and as recited in claim 171, the data-obtaining means 135 serves to construct from the detection data from the electromagnetic field sensing devices 139 a two-dimensional simulation of the matter passing through the detection station 131.

## VI. ISSUES

1. Does EPO '221 anticipate base claim 144 and dependent claim 145?
2. Does EPO '221 anticipate base claim 174 and dependent claims 168-171?

## VII. GROUPING OF CLAIMS

The grounds of rejection apply to a single group of claims, but base claim 144 does not stand or fall together with base claim 174.

## VIII. ARGUMENT

ISSUE 1: Does EPO '221 anticipate base claim 144 and dependent claim 145?

The Examiner's position is that EPO '221 discloses all the limitations that claim 144 recites. The Appellant's position is claim 144 recites, but EPO '221 does not disclose, scanning of a transverse section of a stream of matter at a detection station. In the Office Action mailed June 2002, the Examiner responded to Appellant's position by stating that, "as broadly claimed, EPO '221 does disclose a determining to perform for each detention zone in respect of a plurality of the wavelengths simultaneously." The Appellant has been unable to ascertain what the Examiner intended to convey by indicating that EPO '221 discloses "a determining to perform...". Because the Appellant was also unable to locate any such disclosure in the reference, on 11 September 2002 the Appellant filed a Response asking that the Examiner explain the above statement and that the Examiner also clearly indicate where the alleged disclosure appears in the reference. The Examiner has done neither.

In any event, the Appellant maintains that EPO '221 does not anticipate claim 144 because EPO '221 does not disclose scanning of a transverse section of a stream of matter at a detection station, nor that the determining is performed for each detection zone in respect of a plurality of the wavelengths simultaneously.

Regarding dependent claim 145, the Examiner has not explained the rejection nor has the Examiner identified any disclosure of claim 145 limitations in EPO '221. Neither has the Examiner responded to the Appellant's request that he do so. In any event, the Appellant maintains that claim 145 is allowable both because it depends from an allowable base claim and because it includes limitations not disclosed or suggested in EPO '221.

ISSUE 2: Does EPO '221 anticipate base claim 174 and dependent claims 168-171?

Regarding base claim 174, the Appellant notes that the claim requires that the detection station be a metal detection station, that the emitting means emit an electromagnetic field, and that the receiving means should comprise a multiplicity of electromagnetic field sensing devices arranged to be distributed across the stream. The Examiner has failed to identify structures in EPO '221 that satisfy any of these limitations.

As such, the Appellant maintains that claim 174 and dependent claims 168-171 are in allowable form.

The Appellant also maintains that claim 174 does not stand or fall with whether claim 144 is determined to be patentable. Claim 144 recites an automatic matter inspection method that can be implemented by a broad range of different structures that need not satisfy the specific structural limitations recited in claim 174, e.g., receiving means arranged at the station to extend physically across substantially the width of a matter stream, a metal-detection station, an emitting means that emits an electromagnetic field, or a receiving means that comprises a multiplicity of electromagnetic field-sensing devices arranged to be distributed across a matter stream.

Regarding dependent claim 168, the Examiner has failed to identify in EPO '221, and EPO '221 does not disclose, an emitting means that generates an electromagnetic field and comprises an antenna extending across a stream of matter at a metal-detection station. For this reason, and because claim 168 depends from an allowable base claim, the Appellant maintains that claim 168 is allowable.

Regarding dependent claim 169, the Examiner has failed to identify in EPO '221, and EPO '221 does not disclose, an advancing means for advancing a stream of

matter through a metal-detection station where the advancing means is situated between an emitting means and a receiving means for the field. For this reason, and because claim 169 depends from an allowable base claim, the Appellant maintains that claim 169 is allowable.

Regarding dependent claim 170, the Examiner has failed to identify in EPO '221, and EPO '221 does not disclose, an emitting means connected to an oscillator whereby an electromagnetic field oscillates and wherein sensing devices are electromagnetic field-frequency-sensing-devices. For this reason, and because claim 170 depends from an allowable base claim, the Appellant maintains that claim 170 is allowable.

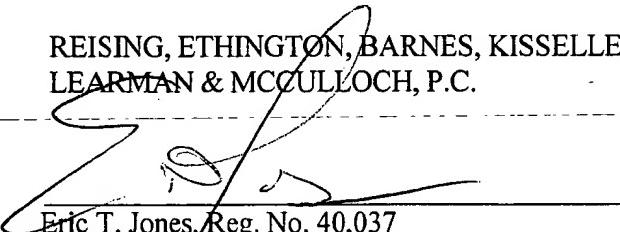
Regarding dependent claim 171, the Examiner has failed to identify in EPO '221, and EPO '221 does not disclose, a data-obtaining means that serves to construct from detection data, obtained from electromagnetic field sensing devices, a two-dimensional simulation of matter passing through a detection station. For this reason, and because claim 171 depends from an allowable base claim, the Appellant maintains that claim 171 is allowable.

January 6, 2003

A check for \$320.00 to cover the appeal brief fee is enclosed. However, the Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 50-0852. Two duplicate copies of this brief are enclosed.

Respectfully submitted,

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Dated: January 6, 2003

IX. APPENDIX

144. A method of automatically inspecting matter for varying composition, comprising advancing a stream of said matter through a detection station, irradiating with electromagnetic radiation a section of said stream at said station, scanning said section and determining the intensity of electromagnetic radiation of selected wavelength(s) received from portions of said stream, and obtaining detection data from said detection station, wherein said scanning is performed in respect of a plurality of discrete detection zones distributed across said stream and said determining is performed for each detection zone in respect of a plurality of said wavelengths simultaneously.

145. A method according to claim 144, wherein portions of said stream comprise polymer and said plurality of wavelengths comprise a plurality of wavelength bands in the region 1.5 microns to 1.85 microns.

168. Apparatus according to claim 174, wherein said emitting means which serves to generate an electromagnetic field comprises an antenna extending across said stream at said metal-detection station.

169. Apparatus according to claim 174, and further comprising advancing means for advancing said stream through said station, said advancing means being situated between said emitting means and said receiving means for the field.

170. Apparatus according to claim 174, wherein said emitting means is connected to an oscillator, whereby said electromagnetic field oscillates, and wherein said sensing devices are electromagnetic field frequency sensing devices.

171. Apparatus according to claim 174, wherein said data-obtaining means serves to construct from the detection data from said electromagnetic field sensing devices a two-dimensional simulation of said matter passing through said detection station.

174. Apparatus for automatically inspecting a stream of matter for varying composition, comprising a detection station through which said stream passes, emitting means serving to emit a detection medium to be active at a transverse section of said stream at said station, receiving means at said station arranged to extend physically across substantially the width of said stream serving to receive detection medium varied by variations in the composition of said matter at said section, detecting means arranged to be in communication with said receiving means and serving to generate detection data in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, wherein said station is a metal-detection station, said emitting means serves to emit electromagnetic field, and said receiving means comprises a multiplicity of electromagnetic field sensing devices arranged to be distributed across said stream.